



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,716	03/16/2004	Katsumasa Hijikata	2004-0416A	1033
52349	7590	02/02/2009	EXAMINER	
WENDEROTH, LIND & PONACK L.L.P.			SHINGLETON, MICHAEL B	
2033 K. STREET, NW				
SUITE 800			ART UNIT	PAPER NUMBER
WASHINGTON, DC 20006			2815	
			MAIL DATE	DELIVERY MODE
			02/02/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/800,716	HIJIKATA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Michael B. Shingleton	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 30 September 2008.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1,4,5,16,19,20,22 and 24 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1, 4, 5, 16, 19, 20, 22 and 24 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

Claims 1, 4, 5, 16, 19, 20, 22 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Note that the Halliburton decision recited below relates to the situation where applicant is very specific as to specific limitations on structure that has already been "seen" and then the claims seems to recite functional language "at the exact point of novelty". Many times these types of claims are indefinite. Again the Halliburton decision states: Claims could be held indefinite "when the inventor is painstaking when he recites what has already been seen, and then uses conveniently functional language at the exact point of novelty". The Halliburton decision recited two Supreme Court cases that "identified the dangers of using only functional claim limitations to distinguish the claimed invention from the prior art" and these are General Electric, 304 U.S. at 371 and United Carbon, 317 U.S. at 234. In the instant case in applicant's claimed invention it would be simply be impossible to have a control circuit that can make the recited cutoff frequency or resonance frequency constant for all range of values in the circuit that would include all values for the power supply, all frequencies applied at the input, all points in time, etc. and thus there must be more to the claims than is positively recited. The examiner has first viewed this language as just broad and breath is not indefiniteness, but it appears especially in light of applicant's remarks and the lack of an amendment to the claims on this issue to make the claims sufficiently definite that there is(are) missing necessary elements/steps in the claims. The Halliburton decision states that the "claims be sufficiently definite to inform the public of the bounds of the protected invention". The scope of the claims are therefore indefinite in view of the Halliburton decision for essential elements and steps necessary to determine the scope of the claim is(are) missing. Is it constant for all values and if not what are these values these frequencies are constant for, which would appear to be necessary to know what the meets and bounds of the claim are? Applicant in an attempt to overcome the 35 USC 112 second paragraph rejection has added by way of the 9-30-2008 amendment "as to make a cutoff frequency of said signal generator constant at a time of a gain setting of said signal generator." So applicant apparently believes that the added phrase recites a "particular" time but this does not set forth a particular time. Every or any time could be "a gain setting time of said signal generator". As this does not limit the scope of the claim the same above rejection under 35 USC 112 second as applied in the previous office action still applies.

If it is truly an invention that cannot be made that applicant is trying to recite, then possibly there is a 35 USC 112 first paragraph issue with how to make the control circuit as the control circuit shown and described is merely shown as a black box in the original disclosure. Stated in other words if applicant meant that the control circuit makes the frequency constant for the cutoff and resonance values for all values of the circuit that include the all values of the signals/voltages/frequencies applied thereto then how would one make such an impossible structure as it is impossible?

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 5, 16, 19, 20, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii et al. US 5,280,641 (Ishii).

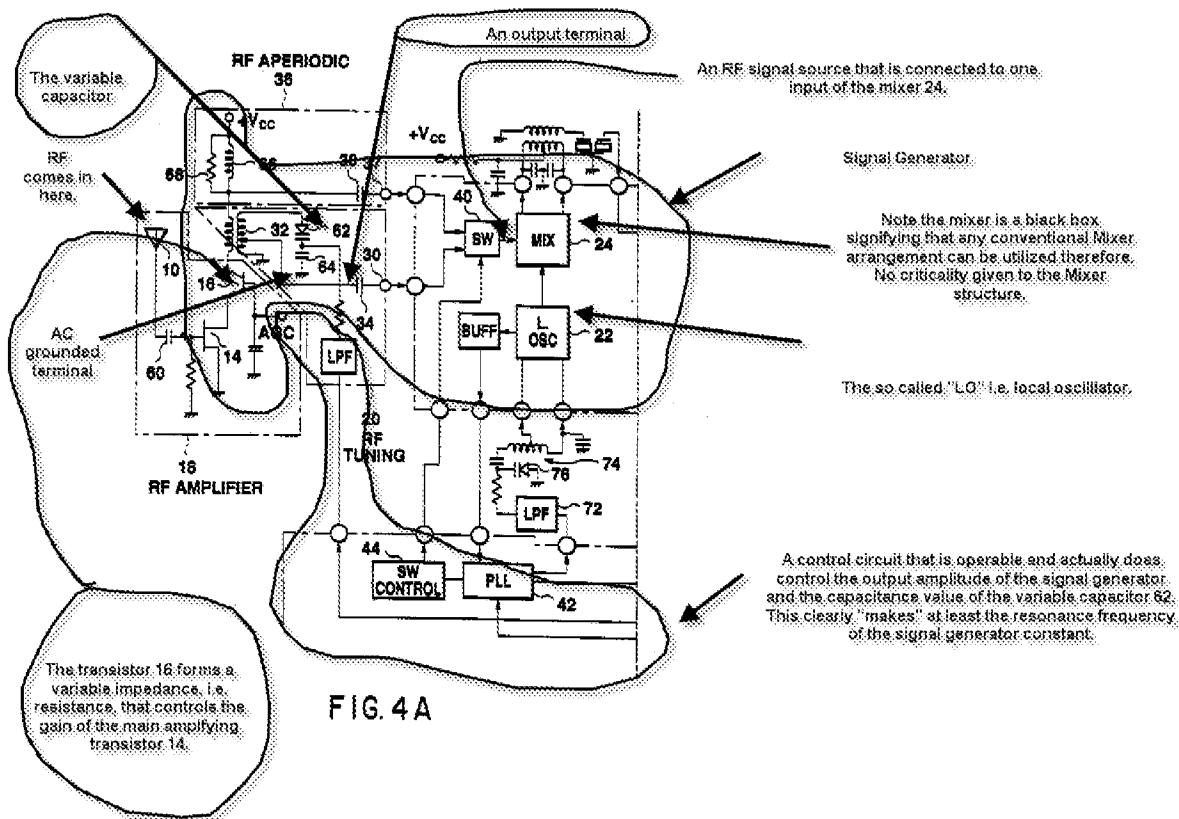


Figure 4A of Ishii

Figure 4A and the relevant text of Ishii discloses a variable gain amplification circuit having a signal generator as indicated above whereby element 16 forms a variable resistor element that is also part of the load for the source/drain of the main amplifying transistor 14. Also the resistor 68 is shown in Ishii as a load for the amplifier or signal generator and while this element is shown as a non-adjustable element to make an element adjustable has long been held as "not a patentable advance", i.e. it would have been obvious to one of ordinary skill in the art. See *In re Stevens*, 101 USPQ 284 (CCPA 1954). Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the element 68 adjustable so as to allow for the tuning of the circuit so as to select the optimum or workable range for the device as is known in the art and as is within routine skill. Element 62 is a variable capacitor that is connected between the output terminal, i.e. the tap on secondary 32 and an AC ground, i.e. note the ground symbol. As indicated in the above the circuitry that provides the control

signal for the variable capacitor and the AGC signal forms the claimed control circuit. The control signal  $V_T$  for the variable capacitor clearly controls the capacitance value of the variable capacitor 62. The claims now recite, i.e. have been amended to recite that the capacitance *makes* either the cutoff frequency or the resonance frequency of the signal generator constant. This is what happens in Ishii. Note that although the signal  $V_T$  may vary for a short period the value the signal does settle down to a single value and remains there till the tuning point is changed thereby making the resonance frequency of the signal generator constant that also corresponds to the maximum point of signal strength.

Some of the claims recite that the RF signal source has a “signal band”, i.e. bandwidth??? equal to or larger than 100MHz. Ishii is silent on this particular bandwidth setting. However, selecting the values and quality of the passive elements like the capacitor is merely the discovery of the workable range for the circuit of Ishii. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the values of the circuit elements in Ishii to achieve a 100MHz or greater bandwidth, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105, USPQ 233.

The signal generator of Ishii also includes a Mixer 24 but Ishii is silent on the details of the construction of the mixer itself. Also Ishii includes a Local Oscillator 22, i.e. “LO”???. It is well known that one art recognized equivalent form of mixer is one that has a variable gain. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have replaced the mixer 24 of Ishii with one that has a variable gain because as the Ishii reference is silent on the exact details of the construction of the mixer 24 one of ordinary skill in the art would have been motivated to use any art-recognized equivalent mixer such as a variable gain mixer.

With respect to the art recognized equivalent forms of variable resistor and capacitor elements. It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the resistor and capacitor elements of the Ishii reference with these art recognized equivalent forms of resistors and capacitors as set forth by the claims because these are art recognized equivalents. These would work as expected and no unexpected results would occur from using one art-recognized equivalent element over another. Most anyone in Electrical Engineering school has used these switched boxed variable capacitor and variable resistor element for a variable resistor and/or variable capacitor in an electronic circuit.

Applicant's arguments with respect to claims of record have been considered but are moot in view of the new ground(s) of rejection. However the following remarks are given. Applicant has added two main things to the independent claims. One is that the variable resistor and the variable capacitor are recited as units that switch in and out capacitor/resistor elements so as to make up a particular resistance or capacitance. This as indicated in the previous office action are very old art-recognized equivalent structures. Throughout time most anyone who has gone through electrical engineering school there are such switched capacitance/resistance units that are and were used in circuits to form the variable capacitance or resistance functions by the students and instructors therein. To say that applicant does not know that these are art-recognized equivalences is questionable. Note that while the variable resistance and capacitance elements are continuously variable in the prior art it is known that one could have many resistance/capacitance elements along with more switches to closely approximate a continuously variable resistance or capacitance. Replacing the variable resistance and variable capacitance structures with art-recognized equivalent structures just does not make for a patentable distinction. A varactor is just a variable capacitor and a transistor, especially MOSFETs, can be viewed a variable resistor. The second main thing that applicant has added to at least claim one is the phrase "at a time of a gain setting of said signal generator". As Halliburton states that the "claims be sufficiently definite to inform the public of the bounds of the protected invention" and presently the claims do not as essential and necessary limitations are missing form the claims. As indicted previously the claims are such that the recited cutoff frequency is constant for all range of values in the circuit which includes all values for the power supply, all frequencies applied to the input, all points in time, etc.. There must be more to the claims than is positively recited so that one, i.e. the public, can be informed of the bounds of the protected invention. Applicant has attempted to address one point and that is the issue of time, but how applicant has addressed this really does not add much of anything to the claims. As stated above while applicant believes that this claims a particular value of time it in fact does not for every or any time can be a time of a gain setting of said signal generator. To try to emphasize this take the prior art and at a particular time that prior art has a "constant" cutoff frequency for a particular value of supply voltage, input frequency, etc.. This "time" would be one time of a gain setting of said signal generator. The examiner only needs one time of constant cutoff frequency even an instantaneous point in time to meet this very broad claim language. The whole idea as related by Halliburton is that the public needs to know what structure is being claimed so that the public will not go to the expense of making an invention that has already been invented and covered by a patent. The claims read on the prior art as these claims are still very broad and if the claims read on these very broad limitations clearly if issued this would prevent the public from

Art Unit: 2815

making what is already in the public domain. There is a point in time that the cutoff frequency has a value in the prior art and thus that value can be called a constant value. The examiner is trying to emphasize that the range of values is not recited, i.e. things are missing so that one can avoid making the claimed invention. The claims don't recite that the cutoff frequency is constant for voltage supply values between one and three volts with a frequency input in the range of 100MHz to 300MHz during a time between 10 seconds after the device power is turned on etc.. Problems arise also because there is no positive structure shown for the control circuit that could be claimed as the original disclosure merely shows this as a black box and thus the examiner cannot suggest any specific structure within the control circuit itself and the examiner would love to suggest structure that could possibly overcome the prior art but again if there is no structure recited for the control circuit the examiner cannot suggest any. MPEP 2114 is very specific that in the claims drawn to structure these claims must be distinguished by structure. Throughout this long prosecution history the examiner has tried to point out how broad and ambiguous the claims are in the instant application. The independent claim while some 17 lines long only has a output circuit of or connected to a signal generator composed of a variable resistor and a variable capacitor that is controlled by a control circuit. All three/four of these main elements are part of the prior art. What is needed is specific structure that can distinguish the claimed invention from the prior art. The values of these variable resistors and variable capacitors of the prior art are selected and this results in a particular point of operation, i.e. a particular cutoff frequency for the signal generator for a particular supply voltage etc. which can be then called a "constant cutoff frequency" for this particular point of operation. The examiner has tried to help the applicant by implying that at least functional things like ranges of values etc. i.e. points or range of points of operation need to be recited because the disclosure lacks specific structural detail which the examiner can point to to help applicant overcome the prior art.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is (571) 272-1770.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker, can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MBS  
April 20, 2007  
June 19, 2008  
January 20, 2009

/Michael B Shingleton/  
Michael B Shingleton  
Primary Examiner  
Group Art Unit 2815